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OBSERVATIONS

ON

THE WIDOWS' FUND

OF

THE ROYAL COLLEGE OF SURGEONS

OF

EDINBURGH.

EDINBURGH:

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1820.

OBSERVATIONS,

&c.

IN the observations which follow, it must be understood, that it is not meant, in the least degree, to impeach the accuracy of the calculations by the late Dr Hay and Mr Wilson, upon which the Scheme, as it now stands, is founded, and in consequence of which the Act of Parliament was obtained in 1813 for the amendment and regulation thereof. These calculations, it is presumed, are perfectly accurate according to the *data* on which they proceeded; but as matters have turned out, since the date of the calculations, some of the *data* have been found to be very erroneous, and consequently the calculations are not to be depended upon.

The most material difference between the assumed data and the fact as it has since turned out, occurs in the number of entrants. These are assumed at 1·8* annually, (being the average of entries from 1777 to 1812 when Mr Wilson made his calculations). If the average age of entrants be supposed 26, and their expectation of life 33·333 years,† this will be just sufficient to keep up the number of Contributors to the Fund at 60; and accordingly the calculations are adapted to a society consisting exactly of that number of members. It so happens, however, that, since Candlemas 1812, the number of entrants has been nearly double the number assumed by Mr Wil-

* One and four-fifths.

† 33 years and 4 months.

son, the whole number of entrants being 26, which, divided by eight, the number of years since Candlemas 1812, gives a quotient of 3·25* as the average number of entrants *per annum*. In the same period there have died 14 contributors; so that on the whole there is an addition of twelve Contributors to the Fund within eight years. The number of Contributors at Candlemas 1812 was - 57

Add entrants,	-	-	-	-	26
					—
					83

Deduct died,	-	-	-	-	14
					—

Number of Contributors at present,	-	69
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It is clear, that if the average accession of members shall be the same in future years, it will be sufficient to raise the number of the members to nearly double the number assumed as the maximum by Mr Wilson. But, independent of this, the experience of past years leads us to expect, that the number of Contributors, which is commensurate to the number of members of the College, will not continue stationary. In 1777, the number was only 31, and it has been gradually, but steadily increasing ever since; and there can be little doubt, that the increase of numbers in future, must continue to keep pace with the increasing size, wealth, and prosperity of the capital of Scotland, and of its far-famed University.

It will not do therefore to adapt the calculations for this fund, for any constant and invariable number of contributors. The numbers must fluctuate, and on the occasion of any great accession of members, such as has lately taken place, means must be provided to meet the probable burden arising from the additional number of widows to be derived from this increased number.

* Three and a fourth.

Supposing that the fund already accumulated, together with the ordinary additions thereto, was just sufficient to provide for the widows of 69 members, it is evident, that on the addition of other ten, or any number of members, provision must be made for their widows, just in the same way, and to the same amount, as if no such fund existed. So long, therefore, as the number of the Contributors continues to increase, the only safe mode of proceeding seems to be, that each new member should pay to the fund, either at entry, or by annual contributions, the just and fair value of the annuity which he eventually secures thereby, should he happen to leave a widow. In conformity to this principle, the following plan is submitted to the Contributors with very great diffidence.

According to the calculations of Dr Price, in order to secure an annuity of L.20 per annum to the widows of any body or society of individuals, each individual should contribute L.4.38, (L.4. 7s. $7\frac{2}{10}$ d.) *per annum*, providing that there shall be no expectation or right of annuity unless the Contributor shall survive his third or fourth payment.

In the Surgeons' Widows Fund, the annual contribution of each member is L.5, the College pays for each L.1 more, and there is no expectation of annuity till after the Contributor has survived his fourth subscription. According to Dr Price, if these were the only sums that went to constitute the Fund, they would afford to the Widows an annuity of only - L.27 7 11
But it is intended to secure to the Widows

upon this Fund, after Whitsunday 1823,

an annuity of, - - - 60 0 0

So that there remains to be provided from

other sources, an annuity of - - L.32 12 1

Before proceeding to calculate what is the true value of this additional annuity, it may be mentioned, that there are certain advantages which this Fund enjoys, not contemplated by Dr Price, and which may lead us to state it at a lower sum than would be fixed by his calculations. Besides the four first contributions, (which are nearly equal to a fine at entry of L.25. 17s. 2d.), there are other fines payable by individuals entering or marrying above a certain age. There is also the chance of the Fund being relieved of Widows by marriage, and it has already been so relieved of four Widows, out of 26, the whole number enrolled. There are too few *data* to calculate accurately the value of these advantages; but there are others which may be more accurately appreciated. As far as experience has gone, the average lives of Contributors has been greater, and the average number of Widows less, than the calculations of Dr Price would lead us to expect. *Lastly*, Dr Price's calculations are formed on the principle of money being improved at four *per cent* compound interest, whereas the monies belonging to this Fund have been hitherto laid out at five *per cent*, though it is not always possible to obtain this rate for the whole, or to have interests and contributions constantly re-employed at the same rate.

Upon the whole, it is thought, that avoiding too severe and too high a calculation on the one hand, and on the other, any risk of promising an annuity which the Fund will not afford to pay, it may be assumed, that besides the four first contributions, and other fines before mentioned, the proper annual payment for each Contributor, should be at a rate not less than L.4. 4s. for each L.20 of annuity; or, for the annuity of L.60, which is proposed to be paid after Whitsunday 1823, L.12. 12s. *per annum*, or something equivalent thereto.

From this sum,	-	-	-	-	-	L.12	12	0
Deduct contributions by Members, and by								
the College,	-	-	-	-	-	6	0	0
Remains to be otherwise provided for,						L.6	12	0

Mr Wilson supposes the average age of entrants to be 26, and the expectation of life, in the favourable circumstances of the case, to be 33.333 years. But it is thought for the present purpose, we may state this expectation a little lower. It will be observed, that the favourable circumstances of the Contributors to this Fund as to life, have a double effect; for while it increases the value of an annual payment to be made by them during their lives, it decreases the value of an annuity, payable after their deaths, to their widows, both diminishing the period of survivance, and postponing the time at which payment commences. Upon the whole, therefore, it is thought the average expectation of life for each Contributor at entering, may be taken at a little below 29 years, so that the present value of an annuity of L.1. payable for every such life, may be taken at L.15.

In order then to make up to the Fund an equivalent for the deficiency of L.6. 12s. in the annual payment of each Contributor, there should be paid by each, at entering, a sum equal to the present value of an annuity of this amount for life, which at the above rate will be L.99. But as money cannot always be improved strictly at the rate of five *per cent* compound interest, let there be added L.1 to this, in order to make up for any loss of interest. In this way each individual should advance at entering, L.100 to the fund.

Instead of this, there is at present paid to the Fund, one half of the entry monies paid by each individual to

the College, on his being admitted a Member. These are very various in amount, being, for strangers, so high as L.250, for apprentices whose indentures are dated since November 1811, L.100, for apprentices whose indentures are dated before that time L.43. 6s. 8d., for sons of Fellows L.8. 6s. 8d., and for sons-in-law of do. L.16. 13s. 4d.

On looking at the entry monies for the last eight years, an alarming deficiency appears in the amount of the sums which have been thus received by the Widows' Fund, and which, instead of amounting to an average payment of L.100 for each Contributor, have not reached much more than one half of that average.

Since Candlemas 1812 there have entered 26 Contributors to the Fund. Of these, eight have paid the high entry money of strangers, viz. L.250

each, in all	-	-	-	-	L.2000	0	0
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Thirteen have entered as apprentices for the freedom, paying the old rate of L.43. 6s. 8d. or in all	-	563	6	8
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Extra sums paid by six apprentices, who had not completed three years from the expiry of their indentures,	63	1	2
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Four of the entrants have been sons of Fellows, paying L.8. 6s. 8d. each, or	33	6	8
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One a son-in-law, paying	-	16	13	4
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Total	L.2676	7	10
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Half of these sums belonging to the Widows' Fund, amounts to	-	L.1338	3	11
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Which, divided by 26, makes an average payment for each of	-	L.51	9	4½
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Being less than what should have been
paid for each, - -

L.48 10 7 $\frac{1}{2}$

This, multiplied by 26, the number of
entrants, makes the total sum which
the Fund has lost by these deficient
payments, - - -

L.1261 16 1

Or, with interest, about L.1500.

Something must no doubt be deducted from this on account of the increased annuity of L.60 not commencing till Whitsunday 1823, but the deduction will be trifling.

Even if the annuity to the Widows were continued at its present rate of L.50, the average payments now made by Contributors appear to be too low. The contributions in this case ought to be equivalent to L.10. 10s. for each Contributor. Of which there is paid by annual rates and by the College L.6, leaving a remainder of L.4. 10s. to be made up by payments at entry. The present value of such an annual payment, taking the expectation of life as before, is L.67. 10s. being L.16. 7 $\frac{1}{2}$ d. more than the actual average payments for the last eight years.

Such being the state of matters for the last eight years, and so great the loss which the Fund has sustained by the entry of new members during that short period, it behoves the Contributors seriously to consider whether such a state of things ought to continue, which may lead in time to consequences highly injurious. It is not to be supposed that the average of entry monies will be much higher in time to come than it has been. The only improvement to be expected is from an increase in the entry monies of apprentices whose indentures are dated after Martinmas 1811, which has been raised from L.43.

6s. 8d. to L.100; but even these will only pay a half of what they ought to do, as only L.50 of this sum comes to the Widows' Fund. On the other hand, a greater number of sons of Fellows may be expected to enter in future than have done formerly; and the entry money of strangers is so high as to prevent several who would wish to enter from doing so.

In these circumstances, as the payments at entry fall so much short of what they ought to be, it is obvious, that unless they are put on some other footing, the Fund will never afford an annuity of L.60 to the Widows; and perhaps after a certain time it may not even be able to continue the present payment of L.50.

To prevent the disappointment and embarrassment which may follow from this, it is very respectfully suggested to the Contributors, that one of the two following plans may be adopted.

1st, That for each individual who becomes a member of the Fund there should be paid into the Fund *by him* or *for him* a sum of L.100, and neither more nor less.

With this view, it will be necessary to enact, as suggested in the letter to the trustees,—

1st, That the sons and sons-in-law of all *future members* (that is to say, the sons and sons-in-law of all who shall hereafter be admitted members of the College), shall pay at their entering the College a sum not less than L.100.

2d, That all *future* apprentices (that is to say, all whose indentures shall be dated after the day of next), shall pay at entering L.125.

3d, That instead of the half of the entry money at present paid to the Widows' Fund, there shall in future be paid by the College to the Fund L.100 on the entry of each Contributor, whether a stranger, an apprentice, or son of a member.

By the above plan, it will be observed, strangers will pay, as formerly, L.250 to the College, L.100 of which will go to the Widows' Fund. The payments of future apprentices, and of sons, &c. of future entrants, will be such as to afford L.100 to be paid for each to the Widows' Fund; but, in the mean time, while apprentices and sons of members pay the present low entry, the College will make up all deficiencies to the Fund, by paying L.100 for each.

If it is thought that the above will be too violent an alteration on the present system and laws as to entries, some modification of it may be adopted, such as the following:—

1st, That strangers shall pay, as at present, L.250; and that the half of this shall go to the Fund, as is the case now.

2d, That *future* apprentices shall pay at entering L.125, L.100 of which shall go to the Fund.

3d, That the sons and sons-in-law of *future entrants* shall pay at their entry L.75, the whole of which shall be paid over to the Widows' Fund.

4th, That in the mean time, while sons, &c. of members, and apprentices, enter at the low rates, the College shall make up all deficiencies to the Fund.

By the first plan, which is certainly the best and securest for the Fund, the payments of all the Contributors will be made equal. By the second, strangers will pay a little more than the value of the annuity they purchase; and the sons, &c. of members a little less. But it is supposed the difference will not be so great as materially to affect the calculations; and if the Contributors do not approve of the first plan, this is recommended as the second best; and one which, if adopted, will effect a very great improvement upon the Widows' Scheme.

If these observations are thought worthy of consideration, it may be proper to have them laid before some experienced accountant, in order that he may go over

them, and point out if there is any mistake or fallacy in the preceding statements and calculations. If these shall be found correct in the main, the Contributors will then be able to judge how far it will be proper to adopt either of the plans now proposed, or any other that may appear more advisable.

An Act of Parliament will be required for carrying all the necessary alterations into effect; but the laws respecting the entry monies to be paid by future apprentices, and the sons and sons-in-law of future Members, may be enacted immediately; and the sooner it is done, the sooner will those evils which threaten the Fund be arrested, and the Scheme placed on a secure footing.

Before concluding these remarks it may be observed, that considering the great accession of Members for the last eight years, and the consequent loss from the deficiency of their average payments, the Fund has continued to flourish in a greater degree than could have been expected under such disadvantages. Various circumstances have contributed to this, particularly the small number of Widows who have come upon the Fund, which has always been below the calculation. In consequence of this chiefly, notwithstanding the above deficiency of L.1500 from entry monies, and loss of about L.400 by a bad debt, the Fund has only required from the College a payment of L.700, to make it very nearly equal to the calculated proportion required for the number of Members belonging to the Fund at Whitsunday last.

This prosperity, however, may not continue, the small number of Widows may be accidental, and is not to be relied on as affording any criterion for future years; and upon the whole it seems evident, that the Fund as it now stands is insufficient to pay the annuities intended and promised to the Widows, at least that it always must be on a precarious footing.

ADDITIONAL OBSERVATIONS

RESPECTING THE

SURGEONS' WIDOWS' FUND,

AND THE

AUXILIARY WIDOWS' FUND.

SINCE the preceding observations were written, it has occurred, that some arrangement might perhaps be made to unite the Auxiliary Widows' Fund to the original Widows' Fund, whereby a part of the evils, to be apprehended from a continuance of the present system, may be obviated. With that view, the Collector has examined the state of the Auxiliary Fund, and the plan on which it was proposed to be applied; and the following remarks occur to him thereon:—

By the Report of the Committee on the Auxiliary Fund, approved of by the College, 11th November 1814, (printed at the end of the Laws), it is recommended, that the sums forming this Fund “ shall be allowed to accumulate
“ till the term of Whitsunday 1822, when, if it shall
“ appear that the interest of the sums so raised, together with the annual produce of the fines, taken at an
“ average of the last three years, shall amount to a sum
“ equal to L. 2. 5s. for each of the greatest number of
“ the Members of the Royal College, who may have
“ been alive at any term of Whitsunday, from said term
“ of Whitsunday 1815, then the Widows of all Mem-

“ bers of the College, who may have died after the said
 “ term of Whitsunday 1815, shall receive annually the
 “ sum of L. 10 Sterling; provided always that the
 “ Widow of any Member, who may have died before
 “ having made his fourth payment to the Widows’
 “ Fund, established by Act of Parliament, shall not be
 “ entitled to any benefit from this Fund, and that the
 “ Members and Widows shall, in this new Fund, be
 “ subject to the same regulations, restrictions, and pe-
 “ nalties, as they are by the said Act of Parliament.”

There then follow certain provisions, in case the annual produce of the Fund should, at Whitsunday 1822, amount to a sum equal to L. 3. 5s. or L. 4. 10s. for each Contributor to the general scheme; in which respective cases it is proposed to give the Widows of Members, dying after Whitsunday 1815, an annuity of L. 15. or L. 20 *per annum* in addition to their annuity from the principal Fund.

Upon this proposal, the Collector has to remark, 1st, That, from the progress the Fund has hitherto made, it does not seem likely that its annual income, at Whitsunday 1822, will reach the smallest of the sums above stated.

By the Collector’s account at last Lammas, the Fund then amounted, with interest, to - L. 402 14 3

Since Lammas, six freedom indentures have been entered into, yielding a sum of - - - 90 0 0

Present amount of Fund, - L. 492 14 3

In the five years, from Martinmas 1814 to Martinmas last, there were in all 30 freedom indentures, paying the high booking money, making, on an average, six indentures *per annum*.

Carry forward, L. 492 14 3

Brought forward,	L. 492	14	3
Taking this as the probable number of future indentures, there will be, to Whitsunday 1822, 15 indentures, yielding	-	-	-
		225	0 0
Interest on the Fund till that time, at four per cent, cannot be calculated accurately, but will not exceed	-	60	0 0
		<hr/>	
Probable amount of Fund at Whitsunday 1822,	-	-	-
		L. 777	14 3
		<hr/>	

As it is not likely such a sum can be lent out on heritable security, it must either be kept in a Bank, or invested in the Funds, where it will probably not yield more than four per cent; at this rate, after allowing for expense of management, it will only yield a clear income of about

	-	-	L. 28	0	0
Add average annual amount of fines,			90	0	0
			<hr/>		

Total income, - - L. 118 0 0
 which is only equal to L. 1. 13s. 7½d. for each Contributor to the Widows' Fund, (taking them at 69, the present number), instead of L. 2. 5s. the lowest amount assumed in the Report.

But, supposing that, by any favourable circumstances, the Fund should be so increased as to possess, at Whitsunday 1822, an income equal to L. 2. 5s. for each Contributor, (which, taking the Contributors at 69, is L. 155. 5s.) it is submitted, that such a Fund would be inadequate to afford an annuity of L. 10. to each Widow left after Whitsunday 1815. A Fund, possessing such an yearly income, would be barely sufficient to pay such an annuity to the Widows left after Whitsunday 1822; but, it will be recollected, that there are at present *six* Widows

on the Fund whose husbands have died since Whitsunday 1815, viz. Mrs Hay, Mrs James Anderson, Mrs Dewar, Mrs Balderston, Mrs Gordon, and Mrs Brown. In the natural course of things, it may be expected, that, by Whitsunday 1822, there may be two or three more, so that the Fund will start from that period with a burden of eight or nine Widows; and, taking the yearly increment at one additional Widow *per annum* till Whitsunday 1832, and one in two years thereafter, until the number reaches the *maximum*, it can require no long calculation to show, that, by paying each Widow L. 10 *per annum*, this Fund would begin to suffer in the course of a very few years, and that such payments could not be continued without destroying the Fund. Perhaps it would be nearer the truth to say, that such a Fund, as is contemplated in the Report, might afford an annuity to the Widows, left after Whitsunday 1815, of L. 7. 10s. *per annum*; but that, as it has turned out so much less than was expected, it could not safely afford more than L. 5. 5s. to every such Widow, at least for the first 10 or 20 years.

Such being the state of this Fund, and so trifling the annuity which it would afford by keeping it separate from the other Fund, it occurs to the Collector, that it might be of much more advantage to all concerned to throw it at once into the Widows' Fund; a measure which will be the more desirable, as that Fund happens to require just the sort of assistance which such an addition to it would be likely to afford.

It has been shewn, that according to the present scheme those who will enter in future on the footing of apprentices for the freedom, will pay to the Fund at entry about L. 50 less than the value of the eventual interest which they acquire in the Widow's Fund. Unless this deficiency is made up in some other way, it is plain that the Fund must finally suffer by many such entries. Now, it does

not appear that this deficiency can be made up more properly, or with more regard to equity, from any other source, than from the booking-money paid by these very freedom apprentices. It seems probable, that L.15 from each freedom apprentice, or, in other words, *joining the Auxiliary to the original Widows' Fund*, will be amply sufficient to make up this deficiency. Even supposing, that of all the freedom apprentices bound after Martinmas 1814, one out of every *three* should afterwards enter the College, (which is a large supposition, and probably will exceed the truth), the booking monies paid to the Fund for every such entrant, (being what is paid for every three apprentices), will be - - L. 45 0 0

To which must be added interest for eight or nine years, being the supposed average time which must elapse after the apprentices are bound, until one of them enters the College. This may be roughly stated

at - - - - 20 0 0

Equal to a payment by each entrant, at his admission, of - - -

L. 65 0 0

From the above it appears, that the contributions from booking money will fully make up all the deficiency in the payments of freedom apprentices at their admission, and leave an overplus, which will go to increase the Fund, and preserve it from suffering from any unforeseen contingencies.

Should this plan be adopted, and should the present payment required of strangers on entering the College be retained; it is thought, that instead of making the sons and sons-in-law of Fellows pay at entry L. 100 to the Widows' Fund, (as suggested in the first plan stated in the former observations), or L. 75 as in the second; they

need not be required to pay more than L.50 to the Fund, *making the payment by them the same as that of freedom apprentices.* This is, no doubt, less than the value of the interest which they acquire in the Fund ; but as the payments by strangers and apprentices, joined to the booking money, will be more, it is thought, upon the whole, that the Fund will not suffer from such an arrangement.

The writer of these Observations submits them with great diffidence to the Trustees, and of course they will not think of acting upon them until they shall be verified by the calculations of a professional accountant. He has himself no experience in such calculations, and may have committed errors of which he is not aware. If this should be the case, however, he hopes the Trustees will impute such errors to their proper cause. They know that he has personally no interest in the matter, and he trusts they will believe that his only object in making these suggestions is to do his duty, by pointing out to them what he conceives essential to the security and well-being of the Fund of which they have appointed him Collector.

